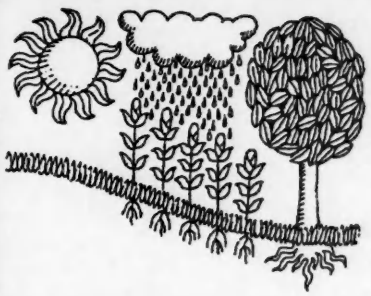

WEEKLY WEATHER AND CROP BULLETIN

U.S. DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration, National Weather Service

U.S. DEPARTMENT OF AGRICULTURE
National Agricultural Statistics Service and World Agricultural Outlook Board

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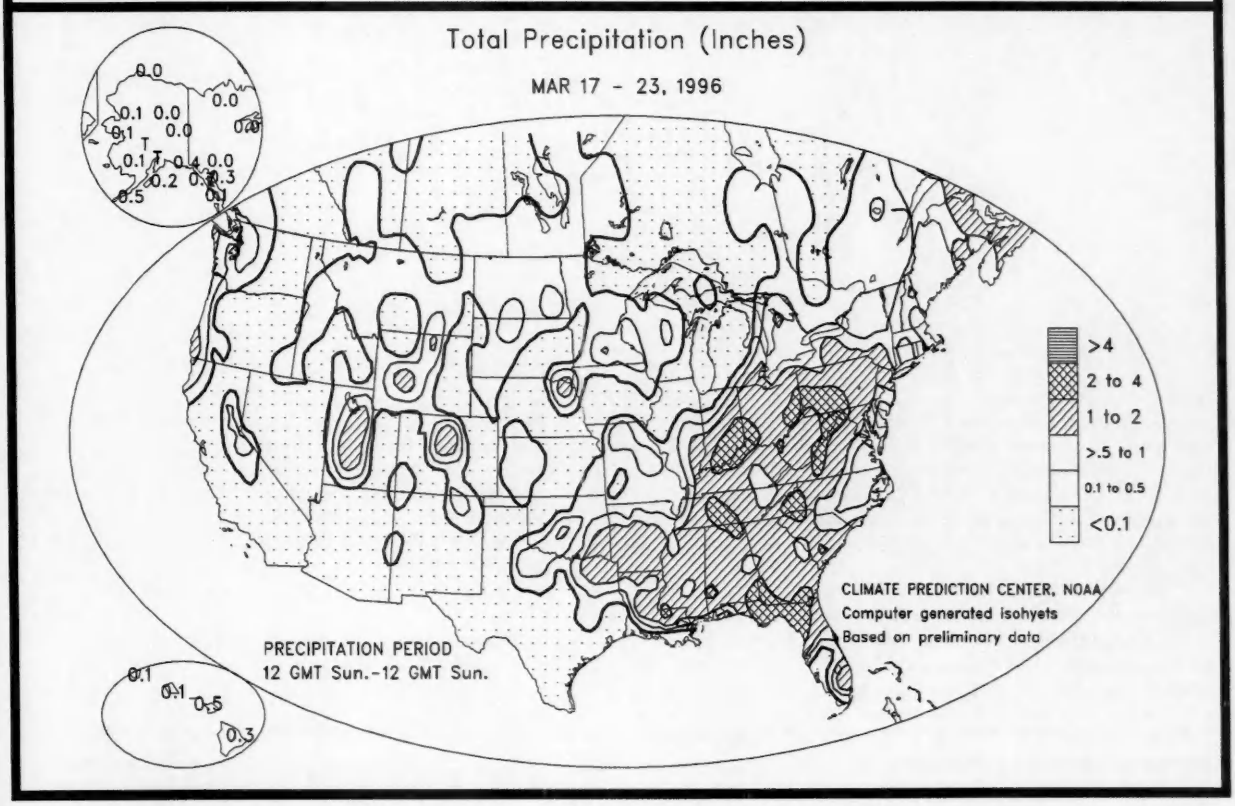

HIGHLIGHTS

March 17 - 23, 1996

A slow-moving spring storm delivered rain to wheat areas of **central Oklahoma** and **northeastern Texas**, dumped heavy snow in the **Ohio Valley**, and kept breezy, cool conditions in place **east of the Rockies**. Meanwhile in the **West**, warm, dry weather prevailed until week's end, when a storm system surged southeastward into the **central Rockies**. By Saturday, heavy snow overspread the **northern Rockies** and **northern Plains**, while rain showers developed in the **Midwest**.

Early in the week, a developing storm over the **southern Plains** brought much-needed rainfall to parts of **Oklahoma** and **Texas**. In **Oklahoma City, OK**, 0.62 inches fell on March 17-18, boosting their

(Continued on page 2)

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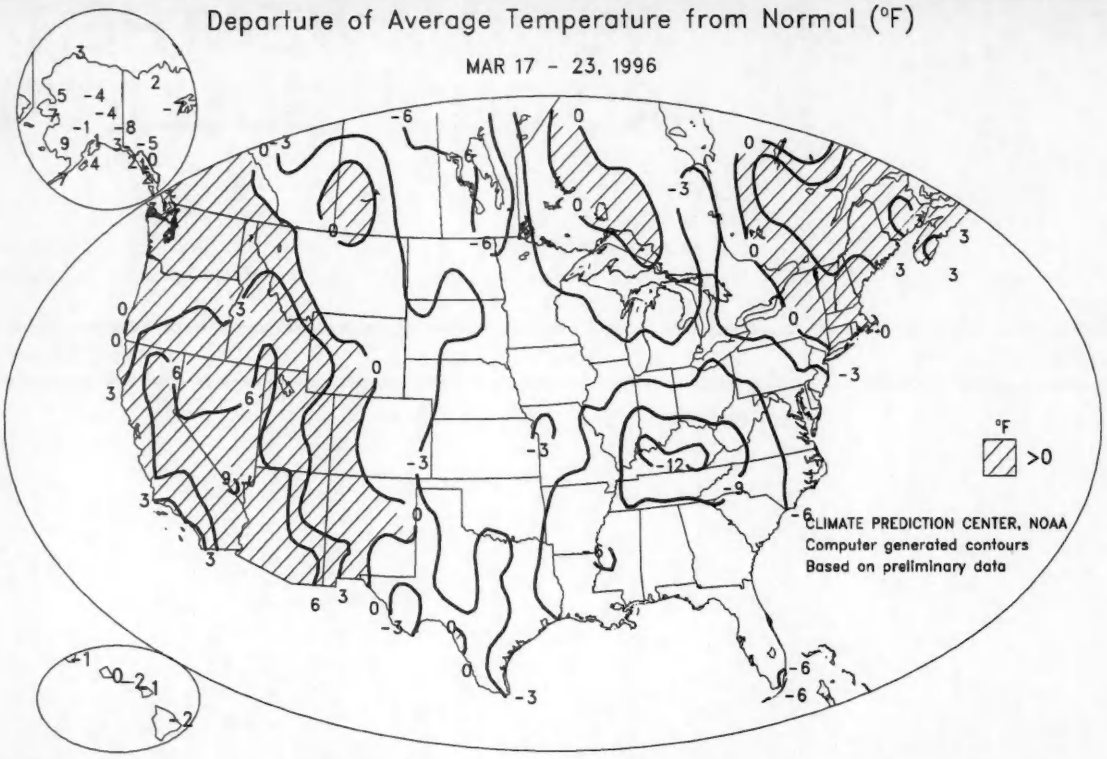


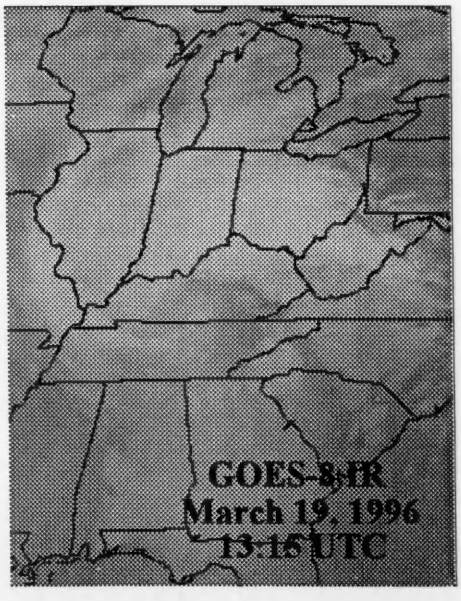
(Continued from front cover)

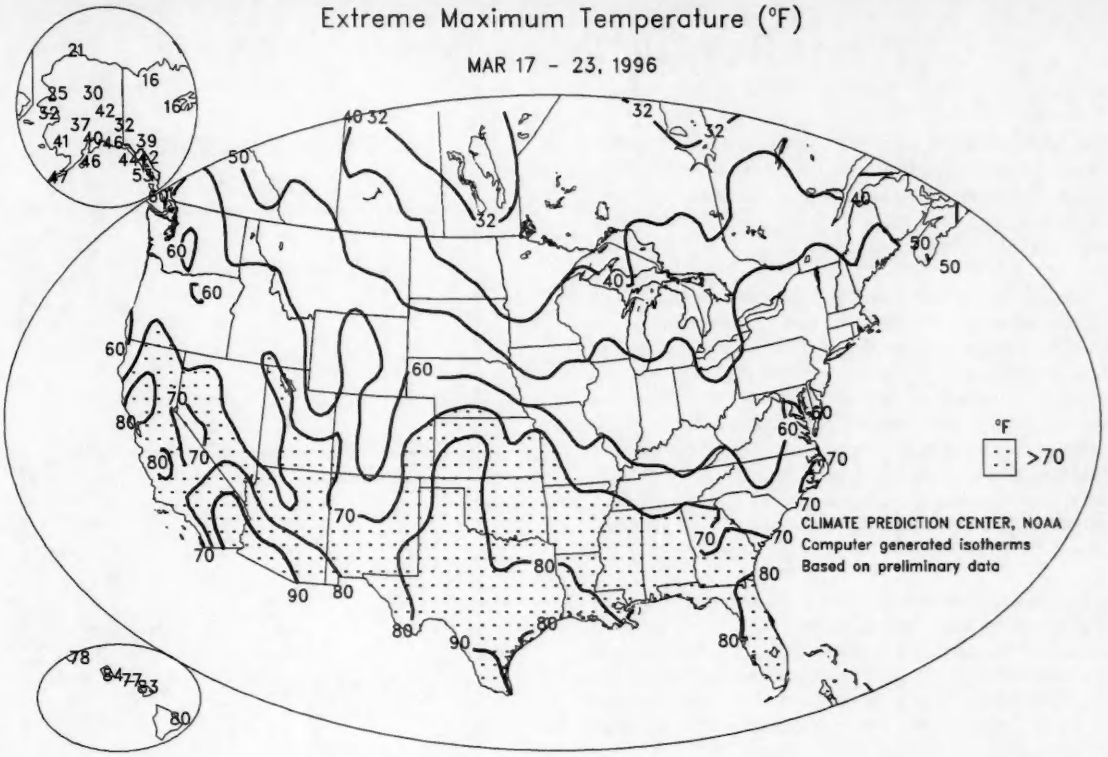
year-to-date total to 0.72 inches, 17 percent (%) of normal. Similarly in **Texas**, storm totals of 0.37 inches in **Wichita Falls** and 0.53 inches in **Dallas** lifted their respective 1996 totals to 1.26 inches (33% of normal) and 1.85 inches (33% of normal). Most of **Kansas**, however, garnered less than a quarter-inch, while the **Texas plains** received little or no rainfall. In the **central High Plains**, meanwhile, March 17-18 snowfall totaled 5.5 inches in **Lander, WY** and 1.5 inches in **Pueblo, CO**.

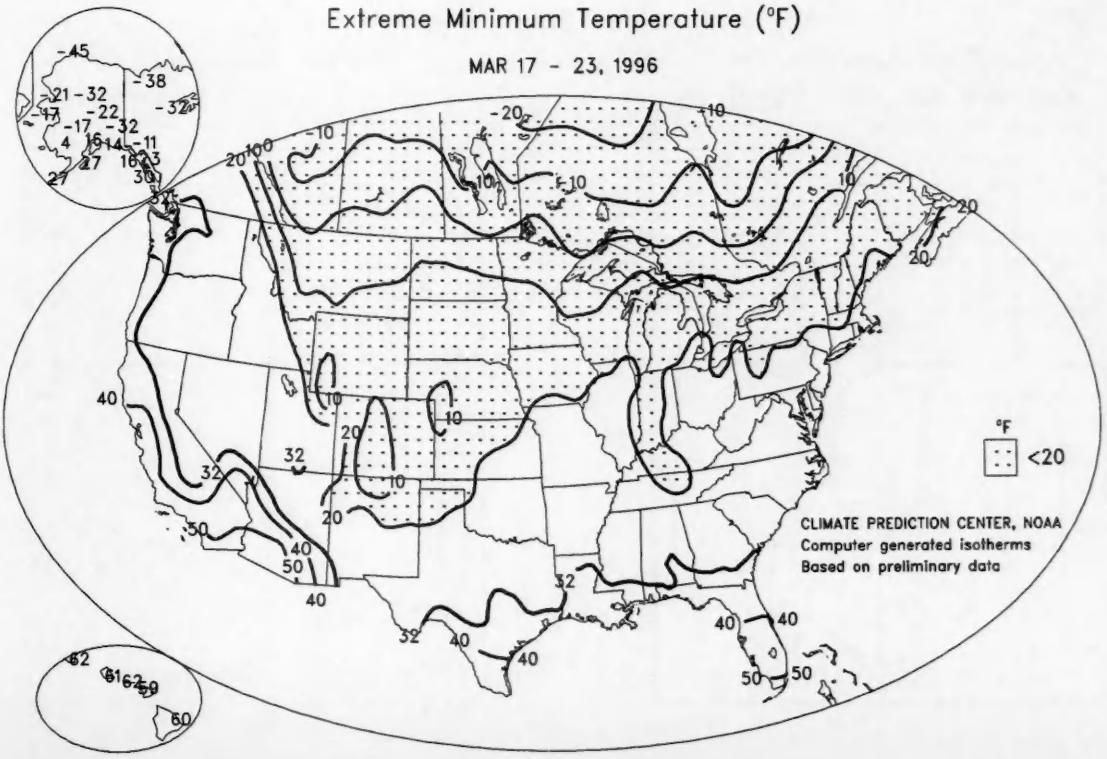
Between March 18 and 21, the storm tracked from the **western Gulf Coast States** to **New England**, producing heavy precipitation. Totals topped 2 inches in a few locations, including **Baton Rouge, LA** (3.34 inches) and **Pittsburgh, PA** (2.05 inches). The system also generated a line of severe thunderstorms on Monday, resulting in about a dozen tornadoes, including nine in **Alabama**. Farther west, northerly component winds in the cold front's wake gusted to 53 mph in **Shreveport, LA** and 52 mph in **Abilene, TX**.

Heavy snow developed in the **Ohio Valley** on Tuesday, encompassing the **central and southern Appalachians** by midweek. March 19-21 totals reached 11.8 inches in **Indianapolis, IN**, 9.5 inches in **Cleveland, OH**, and 8.4 inches in **Flint, MI**. In **eastern Tennessee**, 18 inches accumulated atop **Mt. Leconte**. High winds, which gusted to 47 mph in **Flint** and 40 mph in **Indianapolis**, caused extensive blowing and drifting snow. Seasonal-record snowfall continued to mount in locations such as **Jackson, KY** (storm total 9.4 inches; seasonal total 61.5 inches) and **Charleston, WV** (9.7 inches; seasonal total 103.8 inches). With a 10.3-inch snowfall, **Mansfield, OH** became the latest location to break a seasonal record (83.3 inches), eclipsing 1977-78's total of 77.6 inches.

On Sunday, fleeting warmth ahead of the storm's cold front pushed the temperature to a daily record of 90°F in **Brownsville, TX**. More persistent warmth covered the **West**, where highs on Monday reached 70°F as far north as **Seattle, WA**. After midweek, about a dozen daily-record lows were set from **eastern Texas** to the **Carolinas**, as sub-freezing temperatures again threatened sensitive-stage tree blooms. On Thursday, daily records in **Texas** included 25°F in **Waco** and 30°F in **College Station**; 2 days later, lows included 23°F in **Augusta, GA** and 24°F in **Florence, SC**. At week's end, warmth returned to the **central and southern Plains** on south-to-southwesterly winds that locally topped 50 mph. On Saturday, **Garden City, KS** (83°F) tallied a daily-record high. Farther north, sharply colder air drove southward, and snowfall (through March 23) totaled 12.0 inches in **Lander, WY**, 10.4 inches in **Butte, MT**, and 9.3 inches in **Bismarck, ND**.




Extreme Maximum Temperature (°F)
MAR 17 - 23, 1996
°F
>70
CLIMATE PREDICTION CENTER, NOAA
Computer generated isotherms
Based on preliminary data


Extreme Minimum Temperature (°F)
MAR 17 - 23, 1996
°F
<20
CLIMATE PREDICTION CENTER, NOAA
Computer generated isotherms
Based on preliminary data

Plains Rainfall Update, March 14-25

Winter wheat in portions of the central and southern Plains benefited from the recent passage of a trio of storms. On March 14-15, a strong but compact system crossed northern Oklahoma, delivering widespread rain north of its center (fig. 1). Parts of southern and eastern Kansas received more than an inch of rain.

More recently, a pair of storms have plunged southeastward through the Rockies and into the Plains before turning northeastward. On March 17-18, rainfall topped a half-inch across the southeastern half of Oklahoma and in parts of northeastern Texas (fig. 2). Less than a quarter-inch fell across Kansas, however, while the Texas plains remained critically dry. Rain returned to the eastern Plains on March 24, with the greatest totals from extreme eastern Nebraska southward to northeastern Texas (fig. 3). The precipitation changed to snow in the central Plains, totaling 4.2 inches in Concordia, Kansas, and 6.5 inches in Denver, CO. Only light precipitation dotted western Kansas, while no rain fell on the southern Plains.

Wind gusts in advance of the most recent storm topped 50 mph from the Southwest into the central and southern Plains. As cold air swept into the region on March 24, winds turned northerly and gusts remained above 40 mph. In addition, temperatures plummeted as much as 70°F in 36 hours from highs on March 23 in the 70's to lower 80's. By March 25, daily-record lows were established in locations such as Hays, Kansas (7°F), and Amarillo, Texas (13°F).

24 Hour Precipitation
Ending 6 a.m. CST, March 18

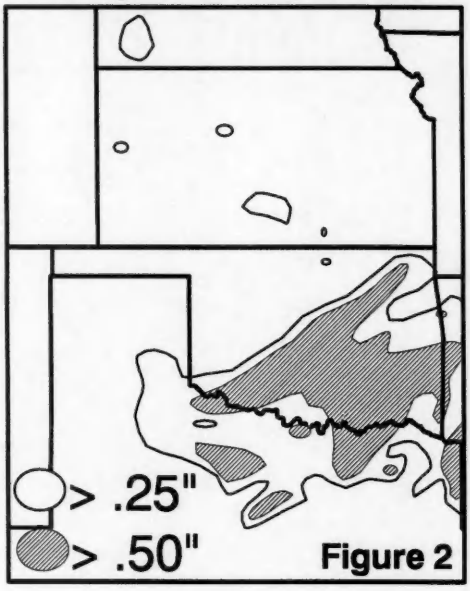


Figure 2

24 Hour Precipitation
Ending 6 a.m. CST, March 15

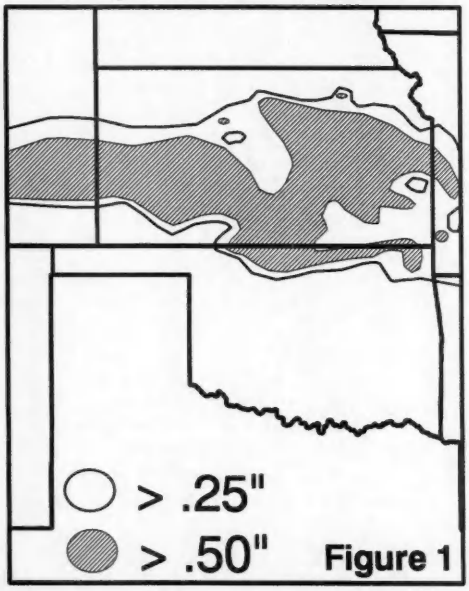


Figure 1

24 Hour Precipitation
Ending 6 a.m. CST, March 25

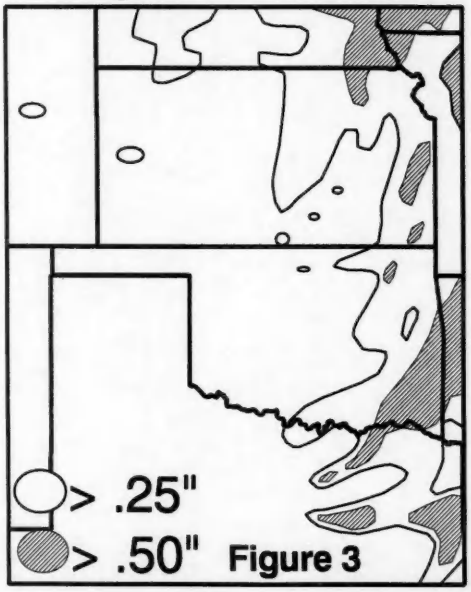


Figure 3

National Weather Data for Selected Cities

Weather Data for the Week Ending March 23, 1996

STATES AND STATIONS		TEMPERATURE °F						PRECIPITATION							RELATIVE HUMIDITY, PERCENT		NUMBER OF DAYS			
																	TEMP, °F		PRECIP.	
		AVERAGE MAXIMUM	AVERAGE MINIMUM	EXTREME HIGH	EXTREME LOW	AVERAGE	DEPARTURE FROM NORMAL	WEEKLY TOTAL, IN.	DEPARTURE FROM NORMAL	GREATEST IN 24-HOUR, IN.	TOTAL IN., SINCE Mar 1	PCT. NORMAL SINCE Mar 1	TOTAL IN., SINCE Jan 1	PCT. NORMAL SINCE Jan 1	AVERAGE MAXIMUM	AVERAGE MINIMUM	90 AND ABOVE	32 AND BELOW	.01 INCH OR MORE	.05 INCH OR MORE
AL	BIRMINGHAM	61	37	74	27	49	-6	1.02	-0.41	0.97	7.78	168	20.46	139	90	35	0	4	2	1
	MOBILE	67	41	78	31	54	-8	0.63	-0.81	0.63	1.21	25	11.85	78	82	37	0	2	1	1
	MONTGOMERY	62	40	75	31	51	-6	1.55	0.14	1.25	6.32	134	17.53	116	81	43	0	1	3	1
AK	ANCHORAGE	36	20	40	16	28	1	0.01	-0.15	0.01	0.42	78	2.94	139	69	47	0	7	1	0
	BARROW	0	-23	21	-45	-12	3	0.00	-0.03	0.00	0.04	44	0.15	45	78	69	0	7	0	0
	FAIRBANKS	29	-11	42	-22	9	-4	0.00	-0.08	0.00	0.47	174	2.20	185	75	30	0	7	0	0
	JUNEAU	39	29	42	23	34	0	--	--	--	--	--	--	--	84	55	0	6	-	-
	KODIAK	43	33	46	27	38	4	0.20	-0.83	0.09	1.38	40	6.31	39	82	52	0	4	4	0
	NOME	23	11	32	-17	17	7	0.13	0.01	0.05	0.31	84	3.23	181	84	69	0	7	3	0
AZ	PHOENIX	83	57	89	53	70	7	0.00	-0.19	0.00	0.55	79	1.81	87	48	12	0	0	0	0
	PRESCOTT	69	37	74	33	53	9	0.00	-0.41	0.00	0.43	30	1.48	33	56	18	0	0	0	0
	TUCSON	82	51	87	46	67	7	0.00	-0.16	0.00	0.32	59	1.13	54	38	9	0	0	0	0
	YUMA	88	60	93	55	74	8	0.00	-0.06	0.00	0.43	239	0.61	81	45	13	4	0	0	0
AR	FORT SMITH	61	34	76	29	48	-6	0.95	0.02	0.95	0.96	33	5.37	71	75	30	0	4	1	1
	LITTLE ROCK	--	--	--	--	--	--	0.98	-0.17	--	1.82	50	5.94	57	--	--	-	-	-	-
CA	BAKERSFIELD	77	49	84	38	63	5	0.00	-0.22	0.00	0.35	44	3.90	142	91	38	0	0	0	0
	EUREKA	56	42	58	37	49	0	0.75	-0.44	0.47	2.71	67	21.55	144	91	49	0	0	2	0
	FRESNO	75	49	81	40	62	6	0.01	-0.41	0.01	1.36	95	6.33	121	89	20	0	0	1	0
	LOS ANGELES	66	56	70	54	61	3	0.00	-0.41	0.00	1.33	86	7.44	114	92	19	0	0	0	0
	REDDING	74	45	83	34	60	7	0.00	-0.96	0.00	1.44	43	20.15	144	78	28	0	0	0	0
	SACRAMENTO	73	48	79	42	61	6	0.00	-0.56	0.00	2.29	126	11.69	134	91	42	0	0	0	0
	SAN DIEGO	64	57	65	55	61	1	0.00	-0.40	0.00	1.06	79	3.46	73	84	37	0	0	0	0
	SAN FRANCISCO	66	48	79	44	57	3	0.00	-0.67	0.00	2.66	122	15.79	158	86	35	0	0	0	0
CO	DENVER	52	24	66	17	38	-2	0.05	-0.26	0.03	0.70	77	0.99	50	91	33	0	7	2	0
	GRAND JUNCTION	62	31	72	24	46	0	0.04	-0.21	0.04	0.41	52	2.13	112	65	19	0	4	1	0
	PUEBLO	57	22	73	16	39	-4	0.08	-0.11	0.06	1.02	182	1.35	113	87	26	0	7	2	0
CT	BRIDGEPORT	46	35	53	27	41	0	0.24	-0.63	0.24	2.43	88	10.86	119	81	42	0	2	1	0
	HARTFORD	49	30	58	22	40	0	0.09	-0.74	0.09	2.20	82	12.08	128	75	36	0	5	1	0
DC	WASHINGTON	51	38	59	32	44	-5	1.06	0.34	1.00	2.22	94	9.22	117	78	45	0	2	2	1
FL	PANAMA CITY	63	48	75	42	55	-5	1.45	0.22	0.86	2.81	67	9.01	61	80	46	0	0	2	2
	DAYTONA BEACH	70	47	82	40	58	-7	0.89	0.26	0.89	7.44	337	14.32	175	90	39	0	0	1	1
	JACKSONVILLE	67	44	81	35	55	-8	1.63	0.84	1.00	5.15	186	7.35	74	89	41	0	0	2	2
	KEY WEST	74	62	81	53	68	-6	0.12	-0.27	0.12	1.39	109	2.50	48	81	57	0	0	1	0
	MIAMI	76	58	87	51	67	-5	0.00	-0.55	0.00	1.30	73	4.43	75	82	43	0	0	0	0
	ORLANDO	73	48	86	41	60	-7	0.87	0.17	0.87	5.53	223	12.44	157	90	39	0	0	1	1
	TALLAHASSEE	67	42	78	30	55	-7	1.95	0.57	1.37	4.27	90	10.76	70	85	40	0	2	2	2
	TAMPA	69	53	77	44	61	-6	0.05	-0.59	0.05	1.47	62	7.70	102	82	51	0	0	1	0
	WEST PALM BEACH	75	54	89	45	65	-7	0.17	-0.48	0.16	3.48	157	5.50	72	85	45	0	0	2	0
GA	ATLANTA	59	38	72	30	49	-6	0.62	-0.69	0.53	5.17	119	17.20	122	78	41	0	3	3	1
	AUGUSTA	60	36	67	23	48	-8	0.80	-0.24	0.70	2.40	68	7.63	64	88	49	0	2	3	1
	MACON	61	40	67	29	50	-8	1.69	0.63	1.41	4.52	125	10.28	79	87	44	0	2	3	1
	SAVANNAH	64	44	77	34	54	-6	0.80	-0.25	0.60	2.34	82	5.70	58	78	42	0	0	1	1
HI	HILO	78	63	80	60	70	-2	0.25	-3.04	0.13	10.51	104	38.61	119	89	63	0	0	5	0
	HONOLULU	82	67	84	61	75	0	0.05	-0.45	0.05	2.86	171	7.35	98	80	48	0	0	1	0
	KAHULUI	80	65	83	59	73	-1	0.48	-0.15	0.48	3.19	155	8.70	95	86	62	0	0	1	0
	LIHUE	77	66	78	62	72	-1	0.06	-0.90	0.06	3.70	120	13.03	105	80	55	0	0	1	0
ID	BOISE	58	35	66	30	47	3	0.12	-0.18	0.12	1.14	119	3.07	88	75	33	0	1	1	0
	LEWISTON	55	38	61	32	47	2	0.49	0.24	0.49	0.76	95	4.04	134	77	39	0	2	1	0
	POCATELLO	55	27	64	18	41	3	0.08	-0.22	0.08	0.98	104	2.80	98	84	30	0	6	1	0
IL	CHICAGO	42	25	53	21	34	-6	0.02	-0.64	0.02	0.46	24	2.66	55	89	48	0	7	1	0
	MOLINE	46	24	53	21	35	-4	0.03	-0.71	0.03	1.02	48	4.44	90	83	37	0	7	1	0
	PEORIA	45	26	51	23	36	-6	0.06	-0.66	0.05	0.95	46	3.20	63	81	38	0	7	2	0
	QUINCY	44	28	54	22	36	-7	0.21	-0.57	0.21	1.10	48	3.85	74	88	34	0	6	1	0
	ROCKFORD	43	23	51	20	33	-4	0.13	-0.48	0.08	0.28	16	2.19	52	83	41	0	7	2	0
	SPRINGFIELD	47	27	56	23	37	-6	0.31	-0.47	0.16	1.01	43	3.53	62	88	42	0	6	3	0
IN	EVANSVILLE	45	27	58	18	36	-13	0.78	-0.38	0.57	3.54	96	8.50	83	94	55	0	6	3	1
	FORT WAYNE	43	27	54	21	35	-5	0.74	0.05	0.56	1.58	74	5.33	89	86	44	0	5	2	1
	INDIANAPOLIS	43	26	56	18	34	-9	1.21	0.32	0.98	2.08	75	7.10	93	89	53	0	6	2	1
	SOUTH BEND	42	26	52	18	34	-5	0.02	-0.73	0.02	0.86	39	4.80	72	80	42	0	6	1	0
IA	DES MOINES	44	25	51	19	35	-5	0.00	-0.55	0.00	0.17	11	1.58	45	76	37	0	6	0	0
	SIOUX CITY	46	20	51	14	33	-5	0.39	-0.09	0.39	0.43	30	1.49	55	83	32	0	6	1	0
	WATERLOO	44	22	50	15	33	-4	0.09	-0.48	0.07	0.18	11	2.40	68	87	36	0	7	2	0
KS	CONCORDIA	54	25	78	17	39	-4	0.03	-0.51	0.03	0.27	17	0.82	28	76	23	0	6	1	0
	DODGE CITY	57	28	84	19	43	-3	0.16	-0.22	0.10	0.96	86	1.43	64	79	29	0	5	2	0
	GOODLAND	52	20	77	6	36	-4	0.07	-0.21	0.06	0.07	6	0.33	20	77	31	0	7	2	0
	TOPEKA	55	29	73	22	42	-4	0.04	-0.58	0.04	0.58	33	1.52	40	75	26	0	6	1	0
	WICHITA	55	31	75	22	43	-5	0.24	-0.39	0.24	1.33	70	1.48	38	73	26	0	4	1	0
KY	BOWLING GREEN	48	27	60	7	38	-13	0.16	-1.01	0.14	2.80	73	11.76	99	95	53	0	5	2	0
	LEXINGTON	44	29	54	22	37	-11	0.58	-0.44	0.50	3.41	104	9.79	103	90	58	0	5	2	1
	LOUISVILLE	47	31	58	25	39	-9	1.96	0.89	1.90	4.27	124	10.41	107	89	49	0	4	2	1
LA	BATON ROUGE	69	43	79	33	56	-7	3.34	2.27	2.93	4.18	117	12.86	91	86	36	0	0	2	1
	LAKE CHARLES	69	43	80	33	56	-6	0.00	-0.73	0.00	0.18	7	4.30	40	94	33	0	0	0	0
	NEW ORLEANS	69	45	79	35	57	-6	0.01	-1.05	0.01	0.69	19	6.97	47	81	35	0	0	1	0
	SHREVEPORT	66	40	81	30	53	-8	0.80	-0.11	0.52	1.19	39	3.95	34	81	35	0	1	2	1

Based on 1961-90 normals

Weather Data for the Week Ending March 23, 1996

STATES AND STATIONS		TEMPERATURE °F						PRECIPITATION							RELATIVE HUMIDITY, PERCENT		NUMBER OF DAYS			
																	TEMP, °F		PRECIP.	
		AVERAGE MAXIMUM	AVERAGE MINIMUM	EXTREME HIGH	EXTREME LOW	AVERAGE	DEPARTURE FROM NORMAL	WEEKLY TOTAL, IN.	DEPARTURE FROM NORMAL	GREATEST IN 24-HOUR, IN.	TOTAL, IN., SINCE Mar 1	PCT. NORMAL SINCE Mar 1	TOTAL, IN., SINCE Jan 1	PCT. NORMAL SINCE Jan 1	AVERAGE MAXIMUM	AVERAGE MINIMUM	90 AND ABOVE	32 AND BELOW	.01 INCH OR MORE	.05 INCH OR MORE
ME	CARIBOU	37	24	49	12	31	4	0.59	0.03	0.39	1.69	94	8.41	136	88	56	0	6	3	0
	PORTLAND	44	26	48	17	35	0	0.57	-0.28	0.55	2.48	92	10.43	108	86	46	0	6	2	1
MD	BALTIMORE	49	34	80	27	42	-4	0.73	-0.04	0.73	2.03	80	11.20	127	76	49	0	2	1	1
	SALISBURY	50	36	80	30	43	-4	0.26	-0.69	0.14	1.22	39	9.45	91	81	43	0	2	2	0
MA	BOSTON	48	34	54	29	41	1	0.63	-0.20	0.47	2.77	102	13.39	133	68	40	0	2	3	0
	CHATHAM	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	-	-	-	-
MI	ALPENA	37	20	44	12	29	-1	0.00	-0.50	0.00	0.15	10	3.08	68	86	43	0	7	0	0
	DETROIT	41	27	51	22	34	-4	0.99	0.39	0.56	1.27	69	4.89	90	77	48	0	6	2	1
	FLINT	40	23	49	16	31	-5	0.59	0.06	0.59	0.90	59	4.21	99	81	49	0	7	1	1
	GRAND RAPIDS	41	24	48	19	33	-3	0.00	-0.64	0.00	0.22	12	2.20	42	77	40	0	7	0	0
	HOUGHTON LAKE	40	22	46	14	31	1	0.00	-0.48	0.00	0.77	53	4.01	96	76	39	0	7	0	0
	LANSING	42	23	52	17	33	-2	0.18	-0.36	0.18	0.70	45	2.28	53	82	38	0	7	1	0
	MARQUETTE	31	16	40	7	24	-2	0.04	-0.62	0.02	0.30	15	8.46	140	86	51	0	7	2	0
	MUSKEGON	41	23	46	15	32	-3	0.00	-0.61	0.00	0.62	34	3.65	64	82	43	0	7	0	0
	SAULT ST. MARIE	34	16	43	7	25	-1	0.00	-0.54	0.00	0.37	22	6.64	112	77	40	0	7	0	0
MN	ALEXANDRIA	31	18	34	11	25	-4	0.09	-0.26	0.09	0.17	17	2.50	97	86	55	0	7	1	0
	DULUTH	33	17	37	6	25	-2	0.03	-0.43	0.02	0.11	8	2.57	75	79	41	0	7	2	0
	INT'L FALLS	34	11	43	4	23	-2	0.00	-0.26	0.00	0.04	5	3.28	143	74	36	0	7	0	0
	MINNEAPOLIS	39	21	44	14	30	-3	0.08	-0.40	0.04	0.23	17	2.34	72	73	33	0	7	3	0
	ROCHESTER	38	19	44	11	29	-3	0.18	-0.26	0.12	0.37	30	2.58	92	82	42	0	7	2	0
MS	GREENWOOD	63	39	80	30	51	-6	0.41	-0.94	0.41	0.48	11	6.78	49	80	34	0	2	1	0
	JACKSON	64	39	78	30	51	-6	1.94	0.56	1.78	5.04	114	15.90	107	84	34	0	1	2	1
	MERIDIAN	65	37	78	28	51	-7	--	--	--	5.43	108	14.74	93	92	35	0	2	-	-
MO	CAPE GIRARDEAU	53	32	62	28	43	-6	0.16	-1.03	0.10	2.16	58	8.69	88	90	37	0	4	3	0
	COLUMBIA	49	30	58	22	40	-4	0.45	-0.29	0.43	0.86	39	3.68	66	76	33	0	4	2	0
	KANSAS CITY	53	29	71	21	41	-4	0.04	-0.57	0.04	0.31	17	1.65	41	72	25	0	5	1	0
	SAINT LOUIS	49	34	60	28	42	-5	0.52	-0.33	0.48	1.05	40	4.84	73	78	30	0	4	2	0
	SPRINGFIELD	53	31	72	21	42	-6	0.10	-0.82	0.08	0.15	5	3.28	50	75	31	0	4	2	0
MT	BILLINGS	44	27	59	12	35	-1	0.10	-0.18	0.08	0.60	73	2.01	83	84	48	0	6	2	0
	GLASGOW	38	22	44	7	29	-3	0.13	0.03	--	0.27	104	0.88	88	88	58	0	7	3	0
	GREAT FALLS	41	22	55	2	32	-3	0.29	0.02	0.18	0.66	84	1.26	55	86	47	0	6	2	0
	HAVRE	43	24	58	7	33	0	0.14	-0.03	0.08	0.37	79	1.31	95	89	48	0	7	2	0
	HELENA	45	21	57	7	33	-2	0.20	0.03	0.20	0.40	77	0.95	60	84	40	0	7	1	0
	KALISPELL	47	24	52	14	35	0	0.00	-0.22	0.00	0.26	36	4.79	141	83	34	0	7	0	0
	MILES CITY	41	24	53	11	33	-2	0.45	0.30	0.30	0.71	169	2.20	154	92	56	0	7	3	0
	MISSOULA	53	28	62	19	40	3	0.33	0.11	0.22	0.73	101	3.62	129	78	31	0	5	2	0
NE	GRAND ISLAND	50	23	65	14	36	-3	0.00	-0.46	0.00	0.00	0	1.07	41	75	27	0	6	0	0
	LINCOLN	51	23	62	14	37	-4	0.00	-0.52	0.00	0.16	11	1.24	45	78	28	0	6	0	0
	NORFOLK	46	23	54	19	35	-3	0.16	-0.29	0.16	0.25	19	1.22	46	83	34	0	6	2	0
	NORTH PLATTE	49	20	65	11	34	-4	0.07	-0.23	0.07	0.12	14	0.83	38	79	37	0	6	1	0
	OMAHA	48	23	55	15	35	-5	--	--	--	--	--	--	--	76	29	0	6	-	-
	SCOTTSBLUFF	51	23	64	14	37	0	0.11	-0.16	0.05	0.41	53	1.24	71	87	32	0	7	3	0
	VALENTINE	45	22	55	9	34	-4	0.00	-0.34	0.00	0.04	4	0.72	36	88	35	0	7	0	0
NV	ELY	58	26	68	22	42	7	0.04	-0.18	0.04	0.84	91	2.09	99	75	22	0	6	1	0
	LAS VEGAS	78	54	86	48	66	9	0.00	-0.08	0.00	0.08	24	0.36	28	30	10	0	0	0	0
	RENO	65	29	73	27	47	4	0.02	-0.13	0.02	1.47	263	4.57	171	80	19	0	7	1	0
	WINNEMUCCA	63	25	72	21	44	4	0.16	-0.03	0.16	0.68	119	3.44	176	81	20	0	7	1	0
NH	CONCORD	45	24	52	16	35	0	0.40	-0.23	0.33	1.54	77	8.98	126	86	39	0	7	2	0
NJ	ATLANTIC CITY	48	32	55	27	40	-3	0.35	-0.48	0.35	2.18	81	7.56	81	77	44	0	4	1	0
NM	ALBUQUERQUE	66	35	70	29	50	1	0.00	-0.12	0.00	0.00	0	0.35	27	45	11	0	3	0	0
	CLOVIS	65	33	79	20	49	0	0.05	-0.09	0.05	0.05	11	0.41	30	58	15	0	4	1	0
	ROSWELL	70	36	80	29	53	0	--	--	--	--	--	--	--	49	19	0	3	-	-
NY	ALBANY	48	27	59	19	37	0	0.27	-0.42	0.17	1.25	58	5.21	78	78	42	0	6	3	0
	BINGHAMTON	38	24	54	16	31	-3	0.67	0.01	0.30	1.34	65	5.44	79	92	56	0	7	4	0
	BUFFALO	40	26	56	20	33	-2	0.80	0.18	0.27	1.73	86	6.40	91	89	57	0	6	4	0
	NEW YORK	49	37	60	32	43	0	1.11	0.27	1.07	3.15	119	9.37	108	72	45	0	1	3	1
	ROCHESTER	41	26	54	21	34	-3	0.54	0.02	0.33	1.79	107	6.61	112	90	55	0	5	3	0
	SYRACUSE	42	25	56	15	34	-2	0.34	-0.31	0.15	1.53	76	5.91	90	89	49	0	6	4	0
NC	ASHEVILLE	49	31	66	25	40	-9	0.58	-0.70	0.57	2.07	48	12.00	93	82	43	0	5	2	1
	CHARLOTTE	54	36	62	27	45	-8	0.69	-0.30	0.65	3.34	96	9.96	90	77	46	0	3	3	1
	GREENSBORO	51	34	57	27	42	-8	1.16	0.32	0.77	3.55	127	9.78	104	79	51	0	3	3	1
	HATTERAS	51	40	53	39	45	-8	0.52	-0.44	--	2.30	--	--	--	49	35	-	-	-	-
	NEW BERN	58	41	73	28	50	-5	0.39	-0.47	0.31	4.19	142	10.17	87	81	46	0	1	2	0
	RALEIGH	52	35	58	24	44	-8	0.16	-0.67	0.10	1.92	67	8.70	85	85	39	0	3	3	0
	WILMINGTON	59	41	68	27	50	-4	0.82	-0.16	0.70	2.69	80	6.83	54	85	49	0	1	2	1
ND	BISMARCK	37	21	47	12	29	-2	0.55	0.35	0.49	0.70	135	2.32	161	82	50	0	7	3	0
	FARGO	30	19	36	11	24	-4	0.24	-0.02	0.24	0.29	40	3.05	161	90	65	0	7	1	0
	GRAND FORKS	27	14	37	6	20	-6	0.22	-0.01	0.18	0.45	67	2.04	109	89	57	0	7	2	0
	WILLISTON	36	20	45	11	28	-3	0.26	0.09	0.24	0.37	79	1.33	91	84	45	0	7	2	0
OH	AKRON-CANTON	40	27	50	21	34	-6	1.63	0.86	1.39	2.75	112	5.26	76	90	62	0	5	4	1
	CINCINNATI	42	26	57	17	34	-11	1.94	0.95	1.82	2.94	94	8.50	100	94	58	0	5	2	1
	CLEVELAND	36	24	49	15	31	-8	1.02	0.34	0.79	1.92	90	6.21	96	88	65	0	7	4	1
	COLUMBUS	42	30	55	24	36	-4	1.17	0.42	0.89	2.50	108	8.44	128	87	57	0	4	2	1
	DAYTON	41	27	54	21	34	-9	0.98	0.17	0.77	2.36	94	7.43	108	89	60	0	5	2	1

Based on 1961-90 normals

Weather Data for the Week Ending March 23, 1996

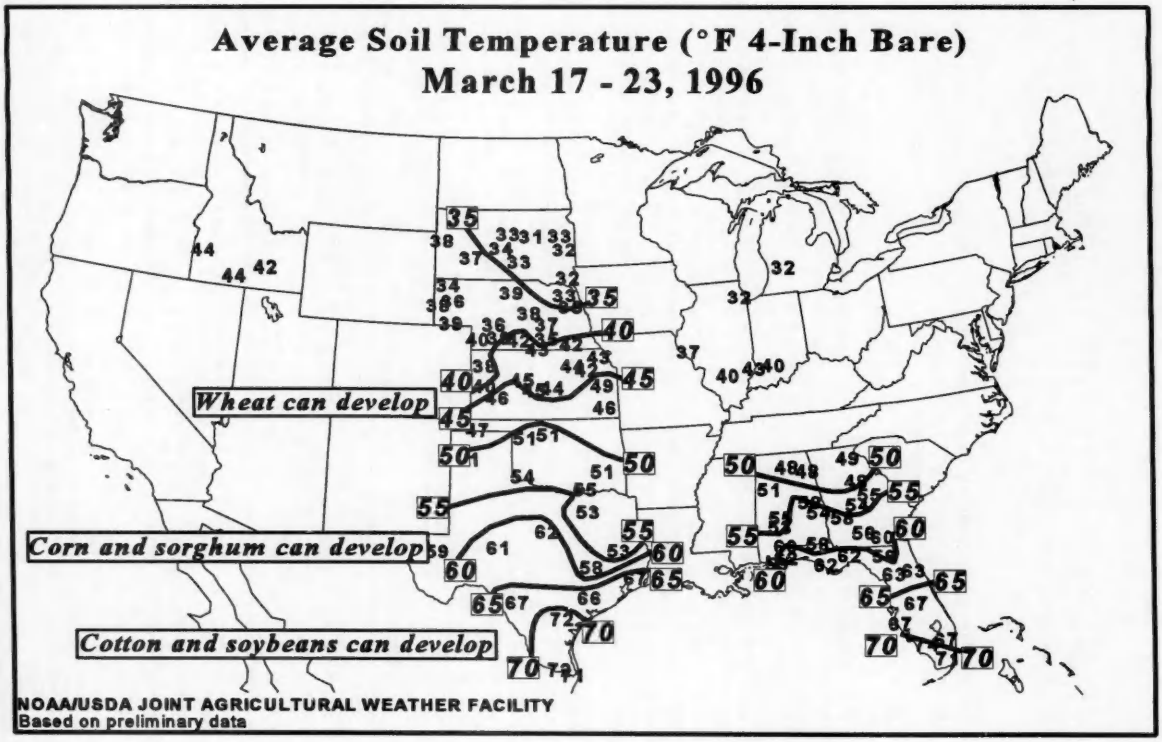
STATES AND STATIONS		TEMPERATURE °F						PRECIPITATION							RELATIVE HUMIDITY, PERCENT		NUMBER OF DAYS			
																	TEMP, °F		PRECIP.	
		AVERAGE MAXIMUM	AVERAGE MINIMUM	EXTREME HIGH	EXTREME LOW	AVERAGE	DEPARTURE FROM NORMAL	WEEKLY TOTAL, IN.	DEPARTURE FROM NORMAL	GREATEST IN 24-HOUR, IN.	TOTAL, IN., SINCE Mar 1	PCT. NORMAL SINCE Mar 1	TOTAL, IN., SINCE Jan 1	PCT. NORMAL SINCE Jan 1	AVERAGE MAXIMUM	AVERAGE MINIMUM	90 AND ABOVE	32 AND BELOW	.01 INCH OR MORE	.05 INCH OR MORE
	TOLEDO	41	27	51	22	34	-4	1.46	0.83	1.26	3.94	204	6.77	124	83	49	0	5	2	1
	YOUNGSTOWN	40	26	53	17	33	-5	1.75	1.01	1.43	2.85	124	7.56	115	93	64	0	7	4	1
OK	OKLAHOMA CITY	61	37	74	26	49	-3	0.62	-0.01	0.61	0.62	31	0.68	14	74	30	0	3	2	1
	TULSA	59	36	76	27	48	-5	0.37	-0.45	0.36	0.63	25	1.26	21	72	27	0	3	2	0
OR	ASTORIA	55	40	70	36	48	2	1.01	-0.55	0.58	4.27	79	27.89	120	97	64	0	0	6	1
	BURNS	56	27	62	23	42	4	0.00	-0.22	0.00	1.10	143	3.87	151	83	28	0	6	0	0
	MEDFORD	66	35	77	32	50	3	0.05	-0.35	0.05	0.23	17	8.62	142	88	31	0	1	1	0
	PENDLETON	56	36	60	32	46	0	0.19	-0.08	0.18	0.66	73	4.14	116	84	42	0	1	2	0
	PORTLAND	58	41	69	36	49	1	0.07	-0.72	0.06	2.51	93	18.96	158	90	45	0	0	2	0
	SALEM	58	37	69	33	48	1	0.14	-0.77	0.14	2.20	69	23.45	170	93	47	0	0	1	0
PA	ALLENTOWN	45	31	57	23	38	-3	0.58	-0.17	0.57	2.29	95	10.61	123	79	48	0	4	2	1
	ERIE	38	26	49	22	32	-6	0.48	-0.22	0.19	1.50	68	6.81	100	91	66	0	7	3	0
	HARRISBURG	44	32	58	27	38	-5	0.87	0.13	0.73	2.08	83	9.72	104	84	49	0	3	4	1
	PHILADELPHIA	48	35	59	30	42	-1	0.86	0.08	0.86	2.94	115	7.96	87	73	49	0	2	1	1
	PITTSBURGH	42	30	54	22	36	-5	2.05	1.25	1.19	3.93	156	10.18	135	90	56	0	3	5	1
	SCRANTON	43	29	58	22	36	-3	0.78	0.19	0.38	2.40	129	10.19	164	84	50	0	4	4	0
RI	PROVIDENCE	49	30	54	24	40	1	0.68	-0.26	0.59	2.70	90	9.84	93	79	38	0	5	2	1
SC	CHARLESTON	60	43	65	32	51	-8	0.81	-0.17	0.73	2.25	68	4.68	46	79	44	0	1	2	1
	COLUMBIA	58	39	65	26	48	-8	0.48	-0.61	0.26	4.85	133	8.94	72	85	48	0	3	3	0
	FLORENCE	58	40	65	24	49	-8	0.30	-0.64	0.22	2.44	78	6.73	67	82	47	0	2	3	0
	GREENVILLE	57	36	69	26	46	-7	1.00	-0.22	0.95	5.69	140	14.98	118	82	39	0	4	3	1
SD	ABERDEEN	36	23	40	15	29	-2	0.34	0.06	0.32	0.55	71	2.63	130	68	50	0	7	2	0
	HURON	40	23	48	17	32	-2	0.00	-0.41	0.00	0.33	28	1.68	73	84	47	0	6	0	0
	RAPID CITY	48	22	56	13	34	-1	0.14	-0.12	0.08	0.94	132	1.82	112	86	44	0	7	2	0
	SIOUX CITY	42	21	48	16	32	-3	0.17	-0.24	0.15	0.48	42	1.65	71	85	39	0	6	3	0
TN	CHATTANOOGA	56	34	73	25	45	-7	0.87	-0.50	0.73	6.12	135	15.74	109	90	40	0	4	3	1
	KNOXVILLE	51	31	67	22	41	-9	0.39	-0.77	0.31	2.99	78	13.17	108	88	49	0	5	2	0
	MEMPHIS	57	37	72	31	47	-7	1.10	-0.15	0.98	2.77	70	10.99	90	78	42	0	1	2	1
	NASHVILLE	51	33	64	25	42	-10	1.82	0.50	1.21	3.51	97	9.90	89	88	45	0	4	3	1
TX	ABILENE	69	41	81	27	55	-2	0.01	-0.30	0.01	0.01	1	0.78	24	63	20	0	2	1	0
	AMARILLO	62	29	81	19	46	-3	0.11	-0.11	0.11	0.11	15	0.43	23	66	20	0	6	1	0
	AUSTIN	72	48	80	34	60	-3	0.00	-0.41	0.00	0.12	9	0.78	15	70	26	0	0	0	0
	BEAUMONT	69	43	81	30	56	-6	0.00	-0.74	0.00	0.06	2	3.73	35	89	38	0	1	0	0
	BROWNSVILLE	78	56	90	46	67	-3	0.00	-0.12	0.00	0.00	0	0.21	7	88	27	1	0	0	0
	CORPUS CHRISTI	76	52	87	41	64	-3	0.00	-0.19	0.00	0.00	0	0.09	2	78	30	0	0	0	0
	DEL RIO	77	50	86	39	63	0	0.00	-0.25	0.00	0.01	1	0.41	12	66	25	0	0	0	0
	EL PASO	73	44	80	31	58	2	0.00	-0.06	0.00	0.00	0	0.31	29	42	11	0	1	0	0
	FORT WORTH	67	43	79	31	55	-1	0.52	-0.18	0.52	0.52	24	1.80	28	72	31	0	1	1	1
	GALVESTON	67	55	74	46	61	-2	0.00	-0.50	0.00	0.00	0	0.77	11	72	40	0	0	0	0
	HOUSTON	72	44	84	30	58	-4	0.00	-0.69	0.00	0.02	1	2.19	22	78	28	0	1	0	0
	LUBBOCK	67	36	80	23	51	-2	0.00	-0.19	0.00	0.00	0	0.28	16	62	17	0	3	0	0
	MIDLAND	71	39	82	28	55	-2	0.00	-0.11	0.00	0.00	0	0.08	6	60	14	0	2	0	0
	SAN ANGELO	71	40	81	27	56	-4	0.00	-0.20	0.00	0.00	0	0.30	12	63	19	0	2	0	0
	SAN ANTONIO	74	45	86	31	60	-3	0.00	-0.34	0.00	0.02	2	0.71	15	70	25	0	1	0	0
	VICTORIA	73	45	79	33	59	-5	0.00	-0.50	0.00	0.00	0	0.32	4	90	31	0	0	0	0
	WACO	70	41	80	25	56	-4	0.08	-0.48	0.08	0.09	5	1.09	20	72	25	0	2	1	0
	WICHITA FALLS	68	38	81	29	53	-2	0.00	-0.57	0.00	0.00	0	0.10	2	69	21	0	3	0	0
UT	CEDAR CITY	64	29	71	24	46	5	0.02	-0.30	0.02	0.18	18	1.81	69	67	18	0	6	1	0
	SALT LAKE CITY	60	36	72	30	48	5	0.63	0.37	0.62	2.02	146	6.66	175	73	34	0	3	2	1
VT	BURLINGTON	44	26	58	15	35	2	0.13	-0.40	0.07	0.48	30	5.01	98	82	36	0	5	3	0
VA	NORFOLK	53	40	71	34	47	-3	0.70	-0.13	0.51	2.27	82	10.79	108	74	40	0	0	3	1
	RICHMOND	52	37	58	27	45	-5	0.44	-0.38	0.28	1.55	57	6.96	75	71	29	0	1	2	0
	ROANOKE	47	33	60	29	40	-8	1.56	0.76	1.54	2.55	98	11.56	138	79	43	0	4	3	1
WA	QUILLAYUTE	55	38	68	33	47	3	1.01	-1.51	0.45	4.35	50	30.16	84	98	72	0	0	6	0
	SEATTLE-TACOMA	56	40	70	36	48	2	0.33	-0.45	0.20	1.63	61	17.31	142	90	54	0	0	4	0
	SPOKANE	52	30	55	27	41	1	0.02	-0.31	0.02	0.58	51	5.56	120	85	40	0	5	1	0
	YAKIMA	59	28	63	26	44	0	0.00	-0.14	0.00	0.40	78	3.52	143	72	29	0	7	-	-
WV	BECKLEY	42	27	58	20	35	-9	0.89	0.12	0.59	3.00	120	11.38	134	91	59	0	6	4	1
	CHARLESTON	44	31	58	25	38	-10	0.97	0.14	0.48	3.43	127	11.31	129	91	62	0	4	5	0
	HUNTINGTON	45	30	57	26	38	-7	0.96	0.16	0.58	3.40	131	11.17	127	91	59	0	4	3	1
	PARKERSBURG	44	31	58	24	37	-7	1.29	0.41	0.79	3.11	110	11.30	126	94	63	0	4	4	1
WI	GREEN BAY	40	21	48	16	31	-2	0.03	-0.47	0.01	0.25	17	2.80	75	76	39	0	7	3	0
	LACROSSE	42	22	49	14	32	-3	0.31	-0.18	--	0.43	32	3.87	122	81	35	0	7	-	-
	MADISON	42	21	51	17	32	-4	0.08	-0.45	0.08	0.28	19	3.33	88	78	39	0	7	1	0
	MILWAUKEE	41	25	47	19	33	-2	0.00	-0.65	0.00	0.13	7	2.13	43	72	40	0	7	0	0
	WAUSAU	39	20	45	11	30	-2	0.05	-0.43	0.05	0.12	9	2.78	85	77	40	0	7	1	0
WY	CASPER	48	21	63	13	34	-1	0.31	0.08	0.18	0.54	61	1.74	98	93	41	0	7	4	0
	CHEYENNE	44	21	57	13	32	-2	0.10	-0.15	0.07	0.83	86	1.23	80	81	36	0	7	2	0
	LANDER	48	25	62	12	37	1	1.40	1.11	0.99	1.42	182	2.83	141	83	40	0	6	4	1
	SHERIDAN	42	27	56	13	35	-1	0.97	0.73	0.42	1.95	291	2.78	133	92	59	0	6	4	0
PR	SAN JUAN	87	71	90	69	79	1	0.10	-0.48	0.08	0.99	59	9.20	137	87	51	1	0	2	0

Based on 1961-90 normals

National Agricultural Summary

HIGHLIGHTS for March 18 - 24, 1996

Scattered rain across the central Great Plains improved wheat condition, but more rain was needed. Cold, windy weather at midweek caused possible freeze damage to wheat in west-central Kansas, and caused leaf burn in the Texas High Plains. Seedbed preparation and small-grain development remained behind normal in Oklahoma and Kansas. In Texas, groundwork was ahead of normal due to chronic dry weather that has allowed producers to accelerate field activities, but some producers delayed planting and waited for rain. Cotton planting continued in south Texas, but the dry conditions have slowed germination and plant growth. More Texas wheat fields were plowed under and were replanted to spring crops as a result of the continued dry weather. In Kansas, wheat jointing was 1 percent (%) complete, 10 points behind the 5-year average of 11% and 24 points behind last year. Dry, warm weather in California allowed field activities to resume and improved growing conditions.


Average Soil Temperature (°F 4-Inch Bare)
March 17 - 23, 1996
Wheat can develop
Corn and sorghum can develop
Cotton and soybeans can develop
NOAA/USDA JOINT AGRICULTURAL WEATHER FACILITY
Based on preliminary data

International Weather and Crop Summary

March 17 - 23, 1996

HIGHLIGHTS

FSU-WESTERN: Snow cover reached as far south as southern Ukraine and North Caucasus region in Russia, preventing early season fieldwork.

EUROPE: Winter grains continued to develop slowly in the north and remained dormant in the east.

NORTHWESTERN AFRICA: Moisture was adequate to abundant for winter grains in or nearing reproduction.

SOUTH AFRICA: Drier, seasonably mild weather favored maturing corn and sugarcane.

AUSTRALIA: Dry weather dominated the main summer crop and pasture areas.

EASTERN ASIA: Light rain aided winter wheat across the North China Plain, as cooler weather slowed winter wheat development.

SOUTHEAST ASIA: Seasonable showers continued in Java. Rainfall increased across the western oil palm areas of the Malay Peninsula.

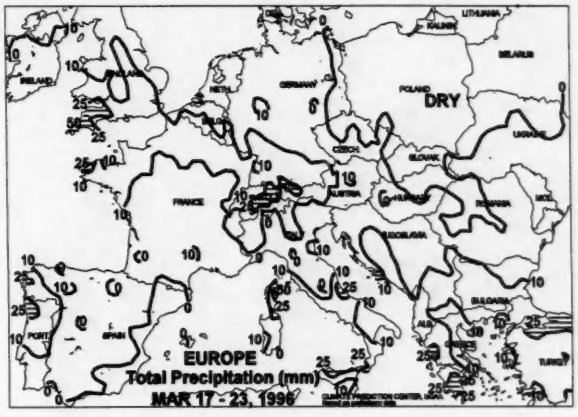
SOUTH AMERICA: Widespread rain continued to favor immature soybeans across central Argentina. In southern Brazil, heavier showers slowed soybean harvesting across the central crop areas.

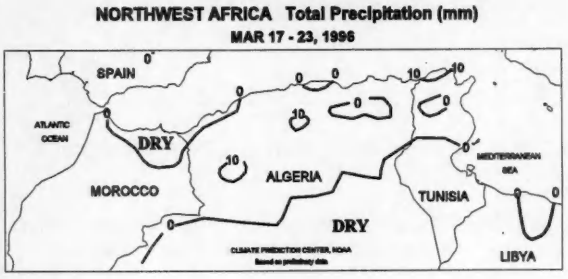
FSU-WESTERN

Unusually cold, dry weather continued to persist over Ukraine, most of Russia, Belarus, and the Baltics during the week. Weekly temperatures averaged 2 to 4 degrees C below normal in Ukraine, central Russia (central Black Soils Region, middle Volga Valley, and the northern tip of North Caucasus Region), Belarus, Latvia, and Lithuania. The cold weather maintained snow cover unusually far south over Ukraine and southern Russia, preventing early season fieldwork. However, the absence of snow in the western and southern portion of Russia's North Caucasus region likely permitted some fieldwork. Winter grains remained dormant over the region. They usually break dormancy in Ukraine and southern Russia in early April.

EUROPE

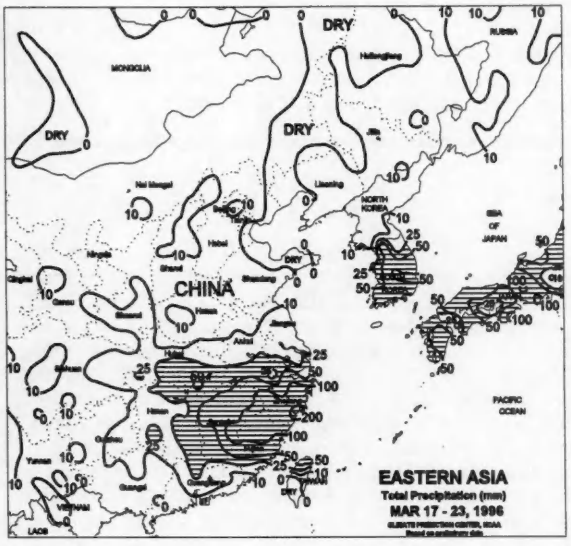
Winter grains continued to develop slowly in northern Europe and were approaching the heading stage in Mediterranean areas. Spring grain planting continued to progress in the United Kingdom and France, but progressed slowly in Germany due to cold weather. Light, scattered precipitation (4-20 mm) covered most areas during the week. Dry weather was confined to Poland, Slovakia, and eastern Spain. Light showers over the United Kingdom and France favored emerging spring grains and winter grain development. Unusually cold weather continued over northern and eastern Germany, slowing greening of winter crops. Winter grains continued dormant in eastern Europe, where weekly temperatures averaged 2 to 4 degrees C below normal.





NORTHWESTERN AFRICA

Winter grains were in or nearing the reproductive phase of development. Although little, if any, precipitation (less than 10 mm) fell over winter grain areas in Morocco, Algeria, and Tunisia, adequate to abundant soil moisture reserves favored crop development. Weekly temperatures averaged near to slightly above normal over the region, promoting crop development.

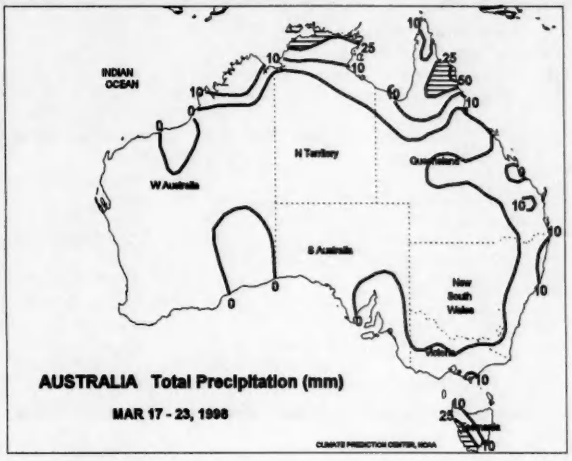


EASTERN ASIA

Light rain (1-5 mm, with scattered amounts greater 10 mm) fell across the North China Plain, aiding early vegetative winter wheat. However, cooler weather (average temperatures 3-4 degrees below normal) slowed winter wheat development. The coolness also slowed spring wheat planting across Manchuria and northwestern grain areas (Gansu, Shaanxi, and Nei Mongol). Widespread rain covered most of southern China, benefiting reproductive winter grains and oilseeds and boosting irrigation supplies for early transplanted rice. Rainfall amounts ranged from 5 to 20 mm across the southern North China Plain (northern Anhui and Jiangsu) and the Sichuan Basin. Heavier rain (25-100 mm) covered southeast China, with amounts greater than 125 mm in Fujian and Zhejiang. Widespread rain (25-60 mm) covered South Korea and Japan, boosting pre-season moisture reserves for rice.

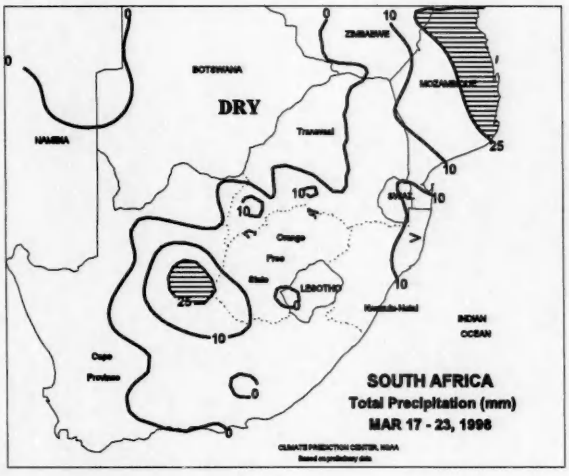
SOUTHEAST ASIA

In Java, widespread, seasonable showers (30-100 mm) maintained moisture supplies for main-season rice. Light to moderate showers (10-50 mm) increased moisture supplies for second-season rice in southeastern Thailand. Dry, sunny weather favored winter-spring rice across Vietnam. Showers (25-100 mm, with an isolated amount greater than 300 mm) benefited western oil palm in the Malay Peninsula, but caused local flooding. Eastern oil palm areas remained dry. Dry weather across Luzon, Philippines aided second-season rice harvesting. Light to moderate rain (20-80 mm) fell across the east-central Philippine Islands.



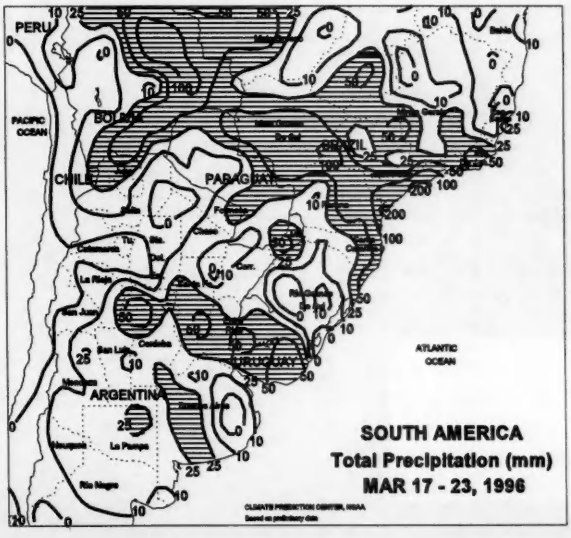
AUSTRALIA

Following last week's beneficial rain, dry weather dominated Australia's main summer crop and pasture areas. In fact, except for a few locations east of the Dividing Range, rainfall exceeding 10 mm was limited to the northern monsoon areas. Temperatures averaged 2-5 degrees C below normal in main agricultural areas of eastern Australia, reducing evaporative losses. Highs, however, still reached the low to mid 30's C in major crop and pasture areas of Queensland and New South Wales. Sorghum and cotton harvesting typically begins in March and April, respectively, and lasts through June. Winter grain planting and sugarcane harvesting are still a few months away. In New Zealand, moderate rain (25-45 mm) covered the main pasture lands of North Island, with heavy showers (50-85 mm) falling in northwestern South Island.



SOUTH AFRICA

Rainfall tapered off across the region, with only a few locations across the northern corn belt receiving more than 10 mm of rainfall. The dryness, accompanied by seasonably warm weather, favored filling as well as maturing corn and sugarcane. Highs ranged from the mid 20's C in the eastern corn belt to the low 30's C farther west, while low's dipped below 10 C in the traditionally cooler sections of the corn belt (Orange Free State and Gauteng). Corn harvesting and winter wheat planting typically run from late-April through June. Sugarcane is harvested from April to September.



SOUTH AMERICA

Widespread late-week showers (10-40 mm) benefited immature soybeans across central Argentina (southern Santa Fe and northern Buenos Aires). Variable late-week rain (4-30 mm) slowed cotton harvesting in the north. Earlier in the week, warm, dry weather favored fieldwork throughout the country. In southern Brazil, a swath of heavy showers (50-100 mm) extended across Mato Grosso do Sul and northern Parana, slowing soybean harvesting. Heavier showers in excess of 200 mm occurred along the coast of Sao Paulo and Parana, causing flooding. Somewhat drier weather (less than 10 mm) prevailed across eastern Mato Grosso but heavy showers (40-90 mm) continued across the central and western portions of the state. In Rio Grande do Sul, light showers (5-15 mm) aided immature soybeans.

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U.S. DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
National Weather Service/Climate Prediction Center
Managing Editor ..... ***Douglas Le Comte*** (202) 720-7919
Editor ..... ***Brad Rippey*** (202) 720-1444
Meteorologists ..... ***David Secora, Jeff Savadel, Brian Morris***
Subscriptions ..... ***Joyce Houston*** (202) 720-7917
fax (202) 720-1455

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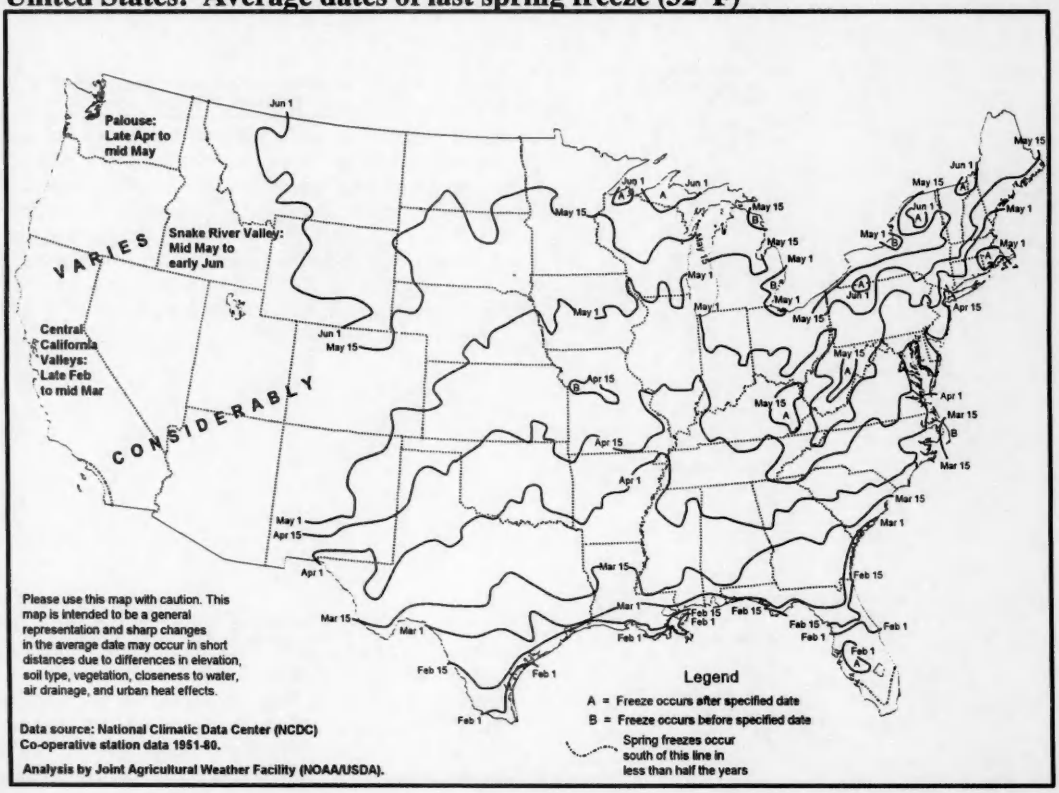
United States: Average dates of last spring freeze (32° F)


Palouse: Late Apr to mid May
Snake River Valley: Mid May to early Jun
VARIES
Central California Valleys: Late Feb to mid Mar
CONSIDERABLY
Please use this map with caution. This map is intended to be a general representation and sharp changes in the average date may occur in short distances due to differences in elevation, soil type, vegetation, closeness to water, air drainage, and urban heat effects.
Data source: National Climatic Data Center (NCDC) Co-operative station data 1951-80.
Analysis by Joint Agricultural Weather Facility (NOAA/USDA).
Legend
A = Freeze occurs after specified date
B = Freeze occurs before specified date
Spring freezes occur south of this line in less than half the years

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